

A Review of Seven Rescue PFDs Used by Whitewater Boaters

Overview

In a review process recently finished in early Spring, we conducted a field review of several rescue vests commonly used by whitewater paddlers. The in-water testing was done in two class II chutes of water on the Mulberry River in Arkansas. Two other ACA instructors as well as other paddlers (nine in all), who had been trained in both the ACA 2-day SWR and new one-day Advanced workshop participated as rescuers in the river activities. This was an independent review with no sponsoring agency and the rescuers received no remuneration for their work.

Brands evaluated were: Extrasport Pro Creeker, Stohlquist X-Tract, Astral 300 R, Kokotat ProFit, MTI Pro Play, and Lotus P-Vest. A seventh, MTI's Patriot, a short waist, high cut vest with greater buoyancy was also reviewed. MTI advertises it as suitable for boaters in bigger water paddling or for rescuers. Vests were purchased from the respective companies, with some of them already being worn by rescuers during winter paddling. We could not obtain the two MTI vests until late winter, 2005 and were unable to get the 2005 Lotus P-Vest at all because of production delays. After completing the review we learned of the changes and improvements made in the '05 Astral vest and will comment on these later in the report.

The Extrasport Pro Creeker, Astral 300 R and Lotus P-Vest are similar in design because these low-profile vests are positioned more on the lower torso or midriff area. Stohlquist X-Tract, Kokotat ProFit and MTI Pro Play are similar because these are short-waist, high cut designs positioned more on the upper torso when snugly adjusted. The MTI Patriot is also a short-waist, high cut design 26.5 lbs of flotation.

Product reviews of whitewater gear and equipment has not been commonly done with any regularity. We did find a couple of other reviews that tested mostly vests suitable for rescue applications or that were universal fit styles.

Our objective was to review the fit and performance of popular low profile, short waist vests that not only give good freedom of movement when paddling whitewater (this includes whitewater kayaks, decked and open canoes, inflatables, sit-on-tops, rafts, etc), but good function and capability when used in rescue applications. We also sought to establish a process with workable criteria that could be revised and used with future field evaluations. It was not our intent to rank the vests in any kind of order--one through seven, nor to establish one that was "best or worst." We wanted to gather product information about overall performance of each vest in a dynamic river setting. All of these vests have been duly approved by the USCG (with testing conducted by Underwriter Laboratories).

QRHS=Quick Release Harness System. Kokatat ProFit can customize with additional pockets.

Discussion of the Vests

Overall impression of each vest included: quality of workmanship, capability for a comfortable and snug fit, and performance, both when paddling and in rescue functions.

EXTRASPORT Pro Creeker (Comes in Red/Black combo)

This is a popular PFD and has given good service to paddlers and rescuers. It is an over-the-head entry but somewhat unhandy to get on and adjusted. Once on and adjusted, however, it gives a comfortable fit and provides good freedom of movement. Even though low profile, we noted it had adequate flotation when swimming in river current. It has a center, medium size front pocket easily accessible and with adequate carrying capacity. Once full, though, it could impede progress in aggressive swimming or self-rescuing over a simulated strainer. This was noted in all three of the vests that had center pockets.

It has excellent nighttime vision with reflective piping all over (actually looked like a christmas tree). The red color provided good day visibility at distances. The shoulder adjustment is Extrasport's retro-glide system and relatively easy to adjust, but a couple of reviewers reported this adjustment sometimes slipped when swimming. Side adjustments were relatively easy to reach for snugging the fit. It has very adequate lower torso protection but the upper torso and collarbone protection needs could be better--also due to low profile design.

The ORHS worked well and the release was consistent. The rescue belt crosses the lower part of the sternum and was not uncomfortable when performing direct or V lowers. It also retained a snug fit after the release.

Several reviewers have used Extrasport vests for many years and they have provided good service and durability. This vest got positive reviews from the group, especially for its comfortable fit and freedom of movement.

STOHLQUIST X-Tract (Comes in Red, Mango, Black and Royal Blue)

Another pull-over entry, this vest is very comfortable when adjusted. It has the Stohlquist Grip-loc material that lets the vest stay put and not ride up the body. The vest conformed well to the body's contour because of its beveled foam. The amount of flotation provided good buoyancy, mobility and ease when performing aggressive swimming. Most of the vests could have better side protection (most have mesh),

but this one has stretch neoprene that the side adjustments straps rest on to add to the vest's comfort. Shoulder adjustments are padded and adjusted easily. Upper torso protection was very adequate and it had good freedom of movement when paddling or swimming. It is also warm in cold weather paddling.

It has one left front mesh pocket that provides easy identification of items, with adequate carrying capacity, but the side entry may let items fall out. We could easily get two carabiners, prusik loops and a knife stored in the pocket. It has good reflective piping for nighttime visibility, but the black color did not seem to contrast enough with the river setting for good day visibility at distances.

On both vests reviewed, the QRHS worked well when performing V or direct lowers. We didn't particularly prefer the arrangement that holds the 'O' ring in position on the rescue belt in back. Because the back sewn-in webbing straps form a 'V' in the middle, a 3-bar and a plastic 'D' buckle are attached to a short piece of webbing to retain the 'O' ring in the middle position. The rescue belt first passes through the plastic 'D' before threading through the 'O' ring, which could cause confusion when re-threading the belt through the 'O' ring after releasing the belt. Previous vests of this brand had some problems with the release because of a small 'O' ring being used. When we purchased this vest new in late Fall, a company representative described modifications that were made, mainly the use of a larger 'O' ring.

Also, the weight of the plastic buckles and 'O' ring can cause the belt to fall out of the right belt loop, a bit of a nuisance when putting on the vest.

This vest is well made and the reviewers liked it especially for good fit, a comfortable feel that contours to the chest cavity, and its capability for staying in place when swimming or in rescue applications, all strong points for this vest. Boaters will like wearing this vest.

ASTRAL 300 R (Comes in Lobster and Rustic Orange)

This vest is a pull-over entry and a unique, low-profile design that has some good ideas and features. Although a bit difficult to get into, once on and adjusted it is very comfortable and gives excellent freedom of movement when paddling. Adjustments for both the sides and shoulders occur from one convenient place--Astral's Z-strap system--and the adjustments stayed put after aggressive swimming or performing lowers. Side panel protection was better on this vest than others. It has a large center pocket and one side pocket for items that give adequate carrying capacity. It has several optional features for attachments as well.

Its lower position on the midriff gives good lower torso protection but we felt its low profile lacked adequate upper torso protection, both back and front, as well as in the collarbone area. A couple of the reviewers indicated it also needed more buoyancy in the upper area when swimming. As with the Pro Creeker and the Lotus P-Vest, when full, the center pocket could impede swimming or self-rescuing over a strainer.

Even though smaller in size (about 1, 3/8" wide), as contrasted with the standard two-inch rescue belt, the QRHS worked well on lowers. Because of its low positioning on the midriff, it did not cause undue pressure as some thought. Reviewers did report they had to search for the toggle and cam buckle when releasing because it tended to "hide" behind the center pocket. The 'O' ring moves freely in back for almost the width of the vest rather than being held more in the center by webbing 'stops' as on other designs. The rustic orange color was not as readily visible in day at distances as brighter colors and the small amount of reflective material was not easily seen at nighttime.

This has become a popular vest and the group especially liked it for its lightweight feel, freedom of movement when paddling and comfortable fit when on and properly adjusted.

We learned that the 2005 model has reinforced spine and rib protection, reflective piping across the back, and a rear beverage bladder and thro-bag stash. We applaud continuing improvements and changes that manufacturer's make to improve the function and capability of vests, especially the rescue capability.

MTI Pro Play (Comes in: Mango)

The Pro Play has a convenient front zipper entry with a fastex buckle that secures the closure at the top. It is a short-waist, high cut design and positioned more on the upper torso which gives good upper protection both front and back. As with other vests, there could be more side panel protection. Lower torso protection could be better as well, the same view we had about two other similar brands--Kokotat ProFit and the Stohlquist X-Tract. The shoulder adjustments work as a ratchet and are padded, and it has four side adjustments, however, the top one, when fully let out, was somewhat difficult to reach and tighten. Once adjusted the vest is comfortable and stays put because of their Internal Kinetic system that prevents it from riding up the torso. The Pro Play had good freedom of movement for paddling.

It has a neat zipper 'keeper' to prevent accidental opening and a removable shoulder lash tab that can be positioned on either shoulder. Two front pockets made of stretch neoprene, give adequate carrying capacity for rescue items.

The vest provided good buoyancy and mobility when aggressively swimming and it stayed in place after in-water functions. The mango color gave the best visibility in daytime, but the thin strip of reflective material was not visible at night.

The QRHS is positioned higher up on the sternum area and worked well when releases were performed. Because the rescue belt does not pass through belt loops on the side area, it positions higher up under the armpits, which could irritate if worn with minimal paddling clothing. Because of this high position, reviewers

reported that the belt seemed to squeeze in uncomfortably on the chest when performing in-water lowers, however, it did allow the swimmer to easily plane to the surface on lowers. We liked the large velcro splotch attached to the 'O' ring that securely holds it in place on the back panel when stowed.

Overall, the quality of workmanship is very good throughout the Pro Play, with good attention to details and construction that can withstand lots of use. The participants liked many features of this vest, but especially it's comfortable fit and freedom of movement. The retail price of \$105 makes it a solid value for whitewater paddlers.

KOKOTAT ProFit (Comes in Mango, Moss and Red)

This vest is a center front entry, easy to put on and remove. The left side flap overlaps to make zipping easy and a fastex buckle at the top secures the closure. Side panels and shoulders (padded) were easy to adjust. It is a short-waist, high cut design giving ample upper torso protection, but lacking lower torso impact protection.

It had one regular duplex, two-in-one pocket and a small inner pocket, open at the top, located on the left side next to the zipper--we felt just these would limit carrying capacity for rescue items, however, extra pockets can be added for customizing. The moss color was too close to the color of the river current and could be missed in daytime, however, it comes in other bright colors. It did not have any reflective tape for nighttime visibility.

The QRHS worked easily when releasing on V or direct lowers. The rescue belt crosses the chest on the lower part of the sternum and was not uncomfortable with the pressure buildup when performing lowers. The 'O' ring runs freely in the back with webbing straps acting as 'stops' on either side of center, a very functional system.

Its slim design provided good mobility when aggressively swimming or self-rescuing over a stimulated strainer, but two swimmers noted it could have a little more buoyancy. For two, it tended to push up a little from the waist after swimming or releasing the QRHS. This may be due to sizing range with the ProFit. The large size ranged from size 44--48, whereas other vests sized as large ranged from 40-44 (Stohlquist), 36-44(M/L on MTI Pro Play), or 41-47 (L/XL Lotus) . It did not seem to contour to the chest as well as some of the other vests but all the adjustment straps functioned easily.

The vest came with an excellent booklet on Rescue Techniques, describing various uses of the rescue PFD and urging paddlers to become trained in Swiftwater Rescue when purchasing the vest. We appreciate such attention to safety issues.

Paddlers, both kayak and open canoe, will like this vest for its lightweight feel, freedom of movement, and functional operation of the QRHS. It has the added

capability of additional pockets and a hydration system worn on the back. The overall quality of this vest is good.

LOTUS P-Vest (Comes in: Fire (Red), Pop Orange, Aztec Yellow, Blue)

This pull-over, low-profile vest has been popular with paddlers and quickly sold out in 2004. Fortunately one of our group regularly wears a P-vest, because we could not obtain an '05 due to production delays.

It has easy entry and removal over paddling clothes and conforms well to the torso when adjusted. Side adjustments are easy to reach and adjust. It's low profile design lacks upper torso impact and collarbone protection but it had good mobility and very adequate flotation for aggressively swimming. It had good freedom of movement when paddling. The main complaint with this vest was slippage of the shoulder straps when adjusted--whether swimming, rolling a kayak, or even sometimes when surfing.

It has a large center pocket for storage, that can also hold the Lotus implant which adds 2 lbs., 8 oz. of additional flotation for bigger water paddling. If inserted, the implant does take away the capacity for storage. Again, when full the center pocket may protrude and could impede swimming in current or self-rescuing over a simulated strainer. It also has internal handwarmer pockets that its owners said had a negligible benefit in cold weather.

The QRHS belt and toggle released easily when performing lowers in the river and the vest tended to stay put although the shoulders sometimes loosened. Three of the four color choices offered are excellent for daytime visibility and the vest had some reflective tape.

Boaters will like this vest for ease of entry and comfortable fit when adjusted, and the large center pocket gives ample storage. It is a stylish and attractive vest with overall solid quality.

MTI Patriot (Comes in: Mango)

The Patriot is also a shorter waist, high cut design with 26.5 lbs. of flotation. MTI advertises it as suitable for paddlers in bigger water (kayak, open canoe, inflatables, rafts, etc), or for rescuers. It is comparable to Extrasport's Swiftwater Fury model.

It has a center front entry with adjustments that work well to obtain a comfortable fit. a velcro strap at the top of the zipper secures the closure. It gives a snug fit and shoulder adjustments work as the Pro Play, with padding for the buckles but the shoulder straps are not as well padded as the Pro Play. It has good upper torso protection, but as with other shorter waist designs, not as much lower protection.

Side panels are mesh and don't give much side area (rib) protection for the larger size person in a size range.

Two offset front stretch neoprene pockets are roomy, it has an attachment for a whistle, and two lash tabs on the left shoulder. Four stainless steel buckles at the bottom could accommodate a crotch strap. The mango color was well seen in daytime work, and it has excellent nighttime visibility because of wide strips of reflective tape down the front and back panels.

Considering the amount of buoyancy, it still has good freedom of movement for paddling, although one reviewer (kayak) said it felt a little bulky. It provided excellent buoyancy on aggressive swims and the added size did not impede progress when self-rescuing over the simulated strainer. Two swimmers did report it interfered a little with head movement on swims or when paddling.

Although not quite as high up, the QRHS works about the same as the Pro Play, with the belt laying more up under the armpits. The release worked easily and the pressure felt by rescuers on lowers was more comfortable than Pro Play, probably due to heavier flotation panels. On both the MTI vests the rescue belt threads from the left side.

Overall quality of workmanship of this vest is very good and it will work well for its intended use by boaters in big water paddling, or for rescue. The reviewers liked its attention to details, mango color, ease of entry, and rugged construction. Considering its retail price of \$125, this vest is a solid value.

Specifications and Options Available on the Rescue Vests

Table 2. Information came from official brochures, company websites, phone conversations with company reps, and actual inspection of each vest.

Company Model	Extrasport ProCreeker	Stohlquist X-Tract	Astral 300 R	MTI Pro Play	Kokatat ProFit#	Lotus P-Vest**	MTI Patriot
Review color	Red/Black	Black	Rustic Or.	Mango	Moss	Fire (Red)	Mango
Flotation	16lbs,13oz	17lbs,8oz	16.75lbs	16lbs,9oz	16lbs,5oz	16lbs,7oz	26lbs,5oz
USCG appr.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fabric	500 denier Cordura	500 denier Cordura	500 denier Cordura	500 denier Cordura	500 denier Cordura	500 denier Cordura	500 denier Cordura +
*QRHS	Yes	Yes	Yes	Yes	Yes	Yes	Yes
QRHS detaches	Yes	Yes	Yes	Yes	Integral	Integral	Yes
Self-tether (optional) ##	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lash tabs/attach	Yes	Yes	Yes	Removable	Yes	Yes	Yes
Pockets	1 center	1 mesh	Lge.front, 1 side	1 large, 1 small	1 large, 1 inner	1 center, (implant)	2 front
Reflective tape	Yes	Yes	Some	Some	No	Yes	Yes

Sizing—regular or overlapping	Overlap	Regular	Overlap	Overlap	Regular	Overlap	Overlap
Retail price	\$175	\$165	\$175	\$105	\$169	\$180	\$125

*QRHS=Quick Release Harness System

**Lotus P-Vest Implant gives 2lbs,8oz additional flotation when placed in the center pocket.

#Kotatat ProFit flotation actually ranges from 16lbs,5oz to 17 lb, depending on size of vest.

##We did not purchase self-tethers with the new vests used in the field review.

Our group felt that the most readily visible colors in day were: red, bright orange, mango, or yellow. Notice that these are colors most often used for rescue thro-bag colors.

Summary and Conclusions

All of the vests in this review have common characteristics due to the USCG approval standards and each one has some fine features. We appreciate continuing efforts by manufacturer's to make improvements that not only provide suitable freedom of movement and good buoyancy for whitewater boating, but also have good rescue capability and function. During this process we've gathered a lot of technical information about the construction of vests. As indicated above, all of the PFDs have been approved by the USCG with testing conducted by Underwriter Laboratories. We have been unable to secure a copy of standards used but have gained information by speaking with production managers of some of the companies/manufacturers. In the near future we'll discuss some technical information as it applies to the function and use of rescue PFDs that will benefit wearers of these vests.

Hopefully, this report will prove helpful both to paddlers when making decisions for purchasing a rescue vest, as well as to companies that make and market them. It seems clear that more ongoing information and input could be exchanged as future improvements are made. For now, perhaps an old cliché will remind us to continue striving for better improvements--"the perfect rescue vest hasn't been made yet"

Suggestions for Future Vests

These are a few ideas that come from instructors and boaters about capabilities they'd like to see with vests, especially when performing rescue functions.

1. We'd like to see some type of breakaway capability for whistles and knives. Also, current rescue education emphasizes "streamlining" things placed on a vest or in pockets to reduce snagging risks. Protruding things or full pockets can snag or impede aggressive swimming.
2. Maybe vests could be longer in the back for spinal protection, and side panel inserts to protect the side/rib area from impact.

3. Increased buoyancy because of in-water rescue applications, yet not to much to impede freedom of movement or self-rescue.
4. Carrying capacity for rescue items located on the back of the vest.
5. Consider stowing the self-tether over the shoulder, rather than having it hang on the side area (snag risk).
6. Can the harness belts detach so they can be positioned for either right or left handed users?
7. Adjustments to the belt loop arrangements for the rescue belt, in order to have space to accommodate carrying the new Reach System from CrossLine Solutions.

Final Thoughts

A PFD is our most important safety tool for meeting the inherent risks associated with whitewater boating. Not only should it provide sufficient flotation, but it should fit well, have adequate carrying capacity, give freedom of movement, and be a "trusted friend" when needed for rescue functions. When purchasing a rescue vest we suggest considering the qualities and characteristics that affect both paddling freedom and rescue capability, and giving equal weight to each. When needed in a rescue scenario the vest becomes more than just a personal flotation device--it becomes a valuable rescue tool. Although you can't take a vest and give it a tryout in the river current before purchasing one, you can ask a paddler who is currently wearing the brand to give you information about the vest. Check it out thoroughly in the store when you purchase it.

It is a good idea to give attention to the amount of flotation relative to personal body size, weight and body type. We found in this review that "vests are not all the same" relative to sizing, design and buoyancy. Vests that come in regular sizing may fit better for you. If purchasing one with overlapping sizes, give a vest good scrutiny to be sure it fits you well.

We encourage boaters everywhere to enroll in swiftwater workshops and be active in promoting safety and rescue techniques and knowledge. Besides the ACA's regular 2-day SWR workshop, a new one-day Advanced workshop concentrates on practicing the basic technical skills in a practice scenario format. Training is vital to have good understanding of the strengths and limitations of using a rescue vest, otherwise the wearer is at risk if not knowledgeable about its use. Any group that regularly paddles together is well advised to take training together so all are "speaking the same language" if a river accident occurs. Stay practiced in the use of a rescue vest so the skills when be automatic when needed.

The following ACA instructors made contributions in establishing the criteria used in the review---Tom Jenkins of Hughes Springs, Texas; Vernon Seaman of Tulsa, Oklahoma and Sam Fowlkes, ACA ITE and SEI Chair. Vernon and Sam also assisted in compiling the report.

Jim Simmons

